Amendments to the Claims

This listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims:

1. (Previously Presented) An information write/read head for a heat-assisted read/write system wherein a recording track on a recording medium is partially heated by projecting thereto a light beam, comprising:

a magnetic head for magnetically recording or reading information with respect to the recording track, said magnetic head having a magnetic gap in a longitudinal direction substantially orthogonal to a longitudinal direction of said recording track; and

an optical slit which allows the light beam for use in heating the recording track to pass therethrough to be guided to the recording track,

wherein said optical slit includes a light emitting section, a longitudinal direction of which is set substantially parallel to the longitudinal direction of the recording track, and whose width in a width wise direction is shorter than a diffraction limit of the light beam.

2. (Original) The information write/read head as set forth in claim 1, wherein:

the light emitting section of said optical slit has a length in a longitudinal direction of not shorter than the diffraction limit of the light beam.

3. (Original) The information write/read head as set forth in claim 2, wherein:

said optical slit is formed in such a manner that a longitudinal direction of the light emitting section intersects with a longitudinal direction of a magnetic gap of said magnetic head.

4. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit is formed in such a manner that its longitudinal direction is substantially parallel to a polarized direction of the light beam to be incident onto said optical slit.

5. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit is formed in such a manner that its longitudinal direction coincides with a polarized direction of the light beam to be incident onto said optical slit.

6. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit has a light incident section of a larger area than the light emitting section.

7. (Original) The information write/read head as set forth in claim 6, wherein:

said optical slit has two side parts facing one another which extend from the light incident section to the light emitting section, said two side parts being inclined with respect to a light incident direction, and

said two side parts totally reflect light incident from the light incident section.

8. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit is made of a light-transmissive material.

9. (Original) The information write/read head as set forth in claim 1, wherein:

said magnetic head and said optical slit are formed in one integral part.

10. (Original) The information write/read head as set forth in claim 9, further comprising:

a heat-shielding layer formed between said magnetic head and said optical slit.

11. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit is formed in such a manner that its longitudinal direction is substantially parallel to a longitudinal direction of the recording tracks.

12. (Original) The information write/read head as set forth in claim 1, wherein:

said optical slit is formed in front of said magnetic head in a scanning direction of the recording tracks.

13. (Previously Presented) An information writing/reading device for a heat-assisted read/write system wherein a recording track on a recording medium is partially heated by projecting thereto a light beam, comprising:

an information write/read head which includes i) a magnetic head for magnetically recording or reading information with respect to the recording track, said magnetic head having a magnetic gap in a longitudinal direction substantially orthogonal to a longitudinal direction of said recording track; and ii) an optical slit which allows the light beam for use in heating the recording track to pass therethrough to be guided to the recording track, wherein said optical slit includes a light emitting section, a longitudinal direction of which is set substantially parallel to the longitudinal direction of the recording track, and whose width in a widthwise direction is shorter than a diffraction limit of the light beam;

an optical system for guiding the light beam to a light incident section of said optical slit.

14. (Original) The information writing/reading device as set forth in claim 13, wherein:

said optical system includes a semiconductor laser device, and

said semiconductor laser device is formed in such a manner that its laser output end face is put together with the light incident section of said optical slit.

15. (Original) The information writing/reading device as set forth in claim 13, wherein:

said optical system further includes an optical fiber, and

the light beam is guided to the light incident section of said optical slit via said optical fiber.

16. (Original) The information writing/reading device as set forth in claim 13, further comprising:

a slider for scanning on an information writing/reading disk as a recording medium;

writing means for outputting a writing signal with respect to said magnetic head; and

reading means for inputting a reading signal from said magnetic head.

17. (Original) The information writing/reading device as set forth in claim 13, further comprising:

tracking means which detects a light beam transmitted through or reflected from said recording medium, which has passed through said optical slit, and performs a tracking operation of the recording tracks based on the transmitted light or the reflected light as detected.

Claims 18-22 (Canceled)

23. (Previously Presented) An information write/read head, comprising:

a magnetic head for magnetically writing or reading information with respect to recording tracks on a recording medium for writing thereon or reading therefrom information by a heat-

assisted system, said magnetic head having a magnetic gap in a longitudinal direction substantially orthogonal to a longitudinal direction of said recording track; and

an optical slit for heating the recording tracks by projecting therethrough a light beam, said optical slit having a light emitting section, a longitudinal direction of which is set substantially parallel to the longitudinal direction of the recording track, and whose width in a widthwise direction is not wider than a diffraction limit of the light beam.

24. (Original) The information write/read head as set forth in claim 23, wherein:

said optical slit includes a light emitting section whose length in a longitudinal direction is not shorter than the diffraction limit of the light beam, and

a longitudinal direction of the light emitting section intersects a longitudinal direction of a magnetic gap of said magnetic head.

25. (Original) The information write/read head as set forth in claim 23, wherein:

a polarized direction of the light beam to be incident onto said optical slit is determined based on the longitudinal direction of said optical slit.

26. (Previously Presented) An information writing/reading device, comprising:

an information write/read head, which includes:

i) a magnetic head for magnetically writing or reading information with respect to recording tracks on a recording medium for writing thereon or reading therefrom information by

a heat-assisted system, said magnetic head having a magnetic gap in a longitudinal direction substantially orthogonal to a longitudinal direction of said recording track; and

ii) an optical slit for heating the recording tracks by projecting therethrough a light beam, said optical slit having a light emitting section, a longitudinal direction of which is set substantially parallel to the longitudinal direction of the recording track, and whose width in a widthwise direction is not wider than a diffraction limit of the light beam;

a slider which mounts thereon said information write/read head, for scanning an information writing/reading disk as a recording medium;

writing means for outputting a writing signal with respect to the magnetic head;

reading means for receiving a reading signal from the magnetic head; and

converging means for converging light onto the optical slit.

27. (Original) The information writing/reading device as set forth in claim 26, further comprising:

tracking means which detects a light beam transmitted through or reflected from said recording medium, which has passed through said optical slit, and performs a tracking operation of the recording tracks based on the transmitted light or the reflected light as detected.

Claims 28 - 41 (Canceled)